We claim:

1. A system for locating and managing private network services using private addresses in a location remote from private network users, comprising:

a host computer executing a plurality of private virtual servers, each private virtual server associated with a private address space and providing private network services to a plurality of private network users located remotely from the private virtual server; and

a multiplexing/demultiplexing mechanism executed by the host computer, and communicatively coupled to a network to receive signals from any of the private networks users, and to route a received signal to the private virtual server associated with the private network user.

2. The system of claim 1 wherein the multiplexing/demultiplexing mechanism switches signals between private virtual servers and tunnels associated with private network users.

3. The system of claim 1, wherein the multiplexing/demultiplexing mechanism demultiplexes an incoming set of signals into segregated signals, and routes each segregated signal to the private virtual server associated with the private network that transmitted the segregated signal.

4. The system of claim 1, wherein the multiplexing/demultiplexing mechanism receives an outgoing set of signals, and routes the signals to an outgoing tunnel associated with the private virtual server that transmitted the signals.

5. The system of claim 1, wherein the multiplexing/demultiplexing mechanism is located on the host computer.

6. The system of claim 1, wherein the multiplexing/demultiplexing mechanism contains a lookup table, the lookup table storing associations between tunnel identifiers identifying tunnels for private networks and private virtual servers that service the private networks.

7. A system for locating and managing private network services in a location remote from private network users, comprising:

a plurality of host server computers;

a plurality of private virtual servers, each private virtual server adapted to execute on one of the plurality of host server computers wherein each private virtual server is associated with a private network user;

a switching mechanism communicatively connected to the plurality of host server computers to receive signals from the private network users and route each signal to the host server computer executing the private virtual server associated with the private network user; and

a multiplexing/demultiplexing mechanism communicatively coupled to the switching mechanism for receiving signals from the switching mechanism and routing signals to the correct private virtual server executing on the host server.

8. The system of claim 7, wherein the signals are addressed using a private address space.

9. The system of claim 7, further including:

at least one tunnel for transmitting a signal between a customer's private network and the switching mechanism.

10. A system for managing virtual servers using private addresses wherein the private addresses overlap, and wherein the virtual servers are located in a location remote from private network users, comprising:

a plurality of host computers;

a plurality of virtual servers residing on the plurality of host computers;

a tunnel switching mechanism communicatively coupled to the host computers, and communicatively coupled to the network to receive signals from any of the private networks users, to route received signals to each host computer executing the virtual server associated with the private network user; and

a multiplexing/demultiplexing mechanism executed by each host computer, and communicatively coupled to a network to receive signals from any of the private networks users, and to route received signals to the virtual server executing on the host computer that is associated with the private network user.

11. The system of claim 10, wherein the private address spaces of a first and a second virtual server overlap.

12. The system of claim 10, further including:

a customer lookup table, the customer lookup table storing associations between physical interfaces and tunnel identifiers identifying tunnels for private networks and a plurality of customer forwarding tables; and

a plurality of customer forwarding tables, each customer forwarding table associating network addresses with physical interfaces and tunnel identifiers.

13. In a system comprising a host computer containing a plurality of virtual servers that each support a private address space wherein the private addresses of two or more of the virtual servers overlap, a method for locating and managing private network services in a data center location remote from private network users of the virtual servers, the method comprising:

receiving a transmission addressed using a private address of a recipient; and

routing the transmission to a virtual server associated with at least one of the sender or the recipient of the transmission.

14. The method of claim 13, further comprising receiving the transmission via a tunnel from a private network.

15. The method of claim 13, further comprising routing the transmission based upon a layer two tunnel identifier.

16. The method of claim 13, wherein routing the transmission to a virtual server comprises:

terminating an incoming tunnel containing a transmission; and

multiplexing the transmission to a virtual server.

17. The method of claim 16, including:

reading a tunnel identifier contained in the transmission; and

selecting a virtual server based upon the tunnel identifier.

18. The method of claim 13, wherein routing the transmission to a virtual server comprises:

terminating an incoming tunnel containing a transmission;

switching the transmission to a tunnel connected to a physical host computer containing a customer's virtual server;

terminating the tunnel at the physical host computer; and

multiplexing the transmission to the virtual server.

19. In a system comprising a host computer containing a plurality of virtual servers which support a private address space wherein a first and a second virtual server private address overlap, a method for performing private network services using private addresses in a location remote from private network users, comprising:

storing a customer lookup table, the customer lookup table storing associations between physical interfaces and tunnel identifiers identifying tunnels for private networks and a plurality of customer forwarding tables;

storing a plurality of customer forwarding tables, the customer forwarding tables associating network addresses with physical interfaces and tunnel identifiers;

receiving a transmission on a physical interface, the transmission containing a tunnel identifier;

determining the correct customer forwarding table from the customer lookup table using the physical interface and the tunnel identifier;

determining via the customer forwarding table a physical interface and tunnel identifier associated with a network address of the transmission; and

sending the transmission to the network address on the determined physical interface using the determined tunnel identifier.

20. In a system comprising a host computer containing a plurality of virtual servers which support a private address space wherein a first and a second virtual server private address overlap, a method for a private network to use private network services, wherein the private network services are located remotely from the private network, the method comprising:

sending a privately addressed transmission on a tunnel to a virtual server; and

receiving a privately addressed transmission back from the virtual server.

21. The method of claim 20, wherein the privately addressed transmission does not include a registered IP address.

22. The method of claim 20, wherein the tunnel encapsulates the privately-addressed transmissions in a layer two protocol.

23. The method of claim 20, further comprising:

segregating a first transmission including an Internet address from a second transmission including a virtual server address; and

sending the second transmission on a tunnel.

24. A method for creating a software architecture suitable for implementing a virtual server system using private addresses wherein the private addresses overlap, the method comprising:

implementing a tunneling protocol to tunnel privately-addressed transmissions between a plurality of virtual servers and a plurality of users; and

implementing a separate routing context on behalf of each user to route privately-addressed transmissions between the users and the virtual servers.

25. The method of claim 24, wherein the tunneling protocol is Asynchronous Transfer Mode virtual circuits.

26. The method of claim 24, wherein the tunneling protocol is frame relay virtual circuits.

27. The method of claim 24, wherein the tunneling protocol is the Point-to-Point protocol across the Layer two Tunneling Protocol.

28. The method of claim 24, wherein the tunneling protocol is the Internet Protocol security protocol.

29. A computer program product for switching signals between private virtual servers and tunnels associated with private network users, the computer program product comprising:

program code for demultiplexing an incoming set of signals into segregated signals; and

program code for routing each segregated signal to the private virtual server associated with the private network user that transmitted the segregated signal.

30. The computer program product of claim 29, further including:

program code for receiving an outgoing signal; and

program code for routing the signal to an outgoing tunnel associated with the private virtual server that transmitted the signal.

31. A computer program product for managing virtual servers using private addresses wherein the private addresses overlap, and wherein the virtual servers are located in a location remote from private network users, the computer program product comprising:

program code for creating a plurality of virtual servers residing on a plurality of host computers;

program code to receive signals from any of the private networks users, and to route received signals to each host computer executing the virtual server associated with the private network user; and

program code to route received signals to the virtual server executing on the host computer that is associated with the private network user.

32. The computer program product of claim 31, further including:

program code for storing associations between physical interfaces and tunnel identifiers identifying tunnels for private networks, and a plurality of customer forwarding tables; and

program code for creating a plurality of customer forwarding tables, each customer forwarding table associating network addresses with physical interfaces and tunnel identifiers.